

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 98/18133

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 B41F7/36 B41F31/02 B41F31/08

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 B41F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 309 681 A (ROCKWELL INTERNATIONAL CORP) 5 April 1989	1,2,13
Y	see abstract see column 9, line 51-58; claim 4; figure 6	3-12
X	EP 0 355 590 A (MITSUBISHI HEAVY IND LTD ;RYOMEI ENG CORP LTD (JP)) 28 February 1990	1,2,13
Y	see the whole document	3-12
Y	US 5 027 706 A (NIEMIRO THADDEUS A ET AL) 2 July 1991 see abstract see column 4, line 1-35	3,5,8,9, 11,12
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

1 December 1998

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 281 597 A (DRESSLER FRIEDRICH K) 4 August 1981 see abstract ----	3-7,10
X	US 5 303 649 A (REDER WOLFGANG O ET AL) 19 April 1994 see abstract; figure 1 see column 3, line 61 - column 4, line 5 ----	1,13
Y	EP 0 071 108 B (DAHLGREN MFG CO) 3 June 1987 see column 4, line 34-42 see column 2, line 14-60 ----	3
X	US 4 388 864 A (WARNER GORDON R) 21 June 1983 see column 6, line 59-65; figure 1 -----	1,13

# INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

PCT/US 98/18133

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0309681 A	05-04-1989	US 4864925 A	12-09-1989
		AU 2008688 A	06-04-1989
		CA 1319560 A	29-06-1993
		DE 3888270 D	14-04-1994
		DE 3888270 T	16-06-1994
		JP 1113244 A	01-05-1989
EP 0355590 A	28-02-1990	US 4962015 A	09-10-1990
US 5027706 A	02-07-1991	AU 607600 B	07-03-1991
		AU 3257389 A	11-01-1990
		CA 1321921 A	07-09-1993
		DE 68911220 D	20-01-1994
		DE 68911220 T	14-04-1994
		EP 0350569 A	17-01-1990
		JP 2034337 A	05-02-1990
		JP 2567093 B	25-12-1996
US 4281597 A	04-08-1981	NONE	
US 5303649 A	19-04-1994	DE 4126722 A	18-02-1993
		DE 9116416 U	03-09-1992
		DE 59206092 D	30-05-1996
		EP 0528264 A	24-02-1993
		JP 2069710 C	10-07-1996
		JP 5193120 A	03-08-1993
		JP 7102699 B	08-11-1995
		RU 2042527 C	27-08-1995
EP 0071108 B	09-02-1983	CA 1224965 A	04-08-1987
		DD 202266 A	07-09-1983
		DE 3227793 A	17-02-1983
		EP 0071108 A	09-02-1983
		JP 58065664 A	19-04-1983
		US 4527479 A	09-07-1985
US 4388864 A	21-06-1983	GB 2048781 A,B	17-12-1980
		JP 55501136 T	18-12-1980
		WO 8001151 A	12-06-1980